EIA-Funded Program Name:

300101 - SC Junior Academy of Science

*** Current Fiscal Year EIA Allocation to this EIA-Program:**

2008-09

*** Name of Person Completing Survey and to whom EOC members may request additional information:**

Dr. Don M. Jordan

*** Telephone number:**

803-777-7007

*** E-mail:**

jodan@gwm.sc.edu

History of the program. Please mark the appropriate response (choose one):This program:

- ○ Was an original initiative of the Education Improvement Act of 1984
- ○ Was created or implemented as part of the Education Accountability Act of 1998
- ○ Has been operational for less than five years
- ○ Was funded by last fiscal year by general or other funds.
- ○ Is a new program implemented for the first time in the current fiscal year
- ◉ Other

What SC laws, including provisos in the current year's general appropriation act, govern the implementation of this program? Provide complete citations from the SC Code of Laws including Title, Chapter, and Section numbers.

NA

Code of Laws:(MAX. 100 characters)

NA

Proviso Number:(MAX: 100 characters)

1A.4 of the General Appropriation Act.

What South Carolina regulations govern the implementation of this program? Provide specific references to the South Carolina Code of Regulations?

Regulations:

Gifted and Talented Act

Do guidelines that have been approved by the State Board of Education, the Commission on higher Education or other governing board exist that govern the implementation of this program?

- ○ Yes
- ◉ No

What are the primary objective(s) or goals of this program? Please distinguish between the long-term mission of the program and the current annual objectives of the program. (The goals or objectives should be in terms that can be quantified, evaluated and assessed.) (MAX 3500 characters)

To increase the number of K-12 students, teachers and schools participating in science, mathematics and engineering activities.
- To enhance the competitiveness of South Carolina students at the Annual International Science and Engineering Fairs (ISEF) (grades 9-12).
- To improve public understanding of and appreciation for the role of science, mathematics and engineering in the state.
- To expand the MESAS program from four regions to five and to update and modernize Regions I, IV & V.
- To provide mathematics and science teachers in the state with enrichment activities that can improve classroom effectiveness, promote professional growth and promote the development of leadership skills.
- To expand our efforts with The State Museum and coordinate events with EdVenture children?s museum.
- To complete the establishment of a journal for citizens of South Carolina from all levels of scientific involvement - from high school students to Nobel Prize winners - to publish their works, findings and articles. The initial issue of the SCAS Journal is available online at www.scacadsci.org. (No other such journal exists in South Carolina)
- A statewide initiative will be implemented for the purpose of raising additional funds from corporate and private sources that will be used to support awards and sustain this initiative.
- Collaborating with the SC State Department of Education in conjunction with the state?s Mathematics and Science Regions in establishing a database of all middle and high school mathematics, science faculty and departments for the purpose of increasing the number of students and teachers reached.

SCAS strives to:
- Provide opportunities for every student at all levels within the state to participate in enrichment activities that can sharpen critical thinking, reward high academic achievement and strengthen national competitiveness.
- Provide opportunities for science and mathematics teachers to participate in enrichment activities that can improve classroom effectiveness, enhance professional growth and cultivate leadership capabilities.
- Provide opportunities for individual schools to participate in enrichment activities that can stimulate parental involvement, raise levels of community interest and intensify school prestige.
- Increase the number of K-12 students, teachers and schools participating in science, mathematics, and engineering activities at the local, regional, state and national levels.
- Enhance the competitiveness of South Carolina students at the Annual International Science and Engineering Fairs (ISEF) (grades 9-12).
- Improve public understanding of and appreciation for the role of science, mathematics and engineering in the State.
- Expand the MESAS and SCJAS programs in the state of South Carolina.
- Increase the number of students in grades 5-8 in South Carolina that are nominated for Discovery Channel Young Science Challenge (DCYSC) and increase the number of winners from this pool at the national level.

Solicitations and publications of the Young Research Grants-in Aid Program (YRGAP), which is sponsored by the
South Carolina Academy of Science (SCAS), will be increased.
- Providing workshops for teachers and students about the Middle and Elementary School Academy of Science (MESAS) and the South Carolina Junior Academy of Science (SCJAS) programs. These workshops are provided on a volunteer basis by mathematics and science faculty, who are members of the SCAS, from across the state. -
- Publishing four editions of the SCJAS newsletter, which provides information on the

Academy?s activities and YRGAP.
- Expanding the South Carolina Junior Academy of Science (SCJAS) mailing list to include teachers, schools and students who have not historically participated in the Academy?s activities.
- The number of travel grants to students that will support their attendance at MESAS, SCJAS, and SCAS workshops will be increased.
- The number

In the prior fiscal year, what primary program activities or processes were conducted to facilitate the program's performance in reaching the objective(s) as provided in question 7? What, if any, change in processes or activities are planned for the current fiscal year? (Examples of program processes would be: training provided, recruiting efforts made, technical assistance services, monitoring services, etc. Answers should be specific to the process undertaken at the state level to support the objectives of the program and should be quantifiable Please include any professional development services provided.)(MAX: 5000 characters)

The two junior divisions of the South Carolina Academy of Science include approximately 1,500 Junior Academy members (grades 9-12) representing approximately 70 active high schools and 3,000 Middle/Elementary Academy members (grades 4-8) representing over 150 active middle/ elementary schools. The SCJAS Newsletter was written, edited, published, and mailed to SCJAS and MESAS members three times during the past year.
Twenty (20) events were sponsored, including 6 workshops for students and teachers alike (3 high schools and 3 middle/elementary) and 8 regional science fairs (which sent 4 to 8 students from each region to International Science and Engineering Fair, resulting in international-winners). The other events included the SCAS Annual Meeting, the MESAS Mail-In Contest and the Young Research Grants-in-Aid Program. This year?s event winners received certificates, cash awards, special recognition from sponsoring groups, as well as trips to national labs, camps and the AAAS meeting (see Spring 2006 issue of SCJAS newsletter for details).The MESAS Mail-Contest was designed with respect to the SC Science Curriculum Guidelines. We believe this feature is in part the reason for the increase in participants from300 in 2004, to 685 in 2005 to 717in 2006 to 806 in 2007. We had 206 winners out of those 806, with 14 grand prize winners from three different regions. Every student who enters is acknowledged with a certificate, and every school with at least one entrant is guaranteed at least one winner.

Fall workshops are sponsored annually by one of the regions? four-year colleges or technical colleges. The workshops provide opportunities to share ideas among fellow students, to familiarize students with the area?s scientific community and to learn scientific techniques as well as how to do a research project. The workshops also develop an understanding among students about the research process. A secondary purpose is to motivate and recruit students into the fields of science, mathematics and engineering. In 2005-06, MESAS workshops were held at Benedict College in Columbia,Lander University in Greenwood, and Charleston Southern University in Charleston. The SCJAS held workshops at Erskine College in Due West and Spring Valley High School in Columbia.

The SCAS/SCJAS Annual Meeting was held at the Midlands Technical College in April of 2007. The SCJAS had over 300 attendees and had 100 award winners from various categories. The SCAS had 250 registered attendees along with approximately 20 judges. (See SCAS Spring 2007 Newsletter for details)

Over $1000 was awarded to a dozen high school students to pursue their high school research projects.

Michelle Sutton Spigner of Spring Valley High School was awarded the SCAS Teacher of the Year award.
Three professors from within the state were awarded with the SCAS Governor?s Award for Excellence in Scientific Research. This award comes with a $1000 honorarium and a plaque presentation inside the Governor?s Office.

In the prior fiscal year and using the most recent data available, what were the direct products and services (outputs) delivered by this program? (Examples of program outputs would be: number of teachers attending professional development seminars, number of AP exams given and students taking AP classes, number of students served in the program, etc.)(MAX: 5000 characters)

Graham van Schaik of Spring Valley High School won first place in the Environmental Science category and Best of Show in the Environmental Science competition. Shivani Agarwal, also of Spring Valley, won third place in the Bio-Chemistry category at the International Science & Engineering Fair (ISEF) held in Albuquerque, NM. The ISEF is the largest pre-collegiate science and engineering competition in the world with over 1500 participants from the U.S. and 50 countries, and over $4 million dollars in awards given out.

Graham, who placed second in this competition last year, won $8000 and a laptop computer presented by the Intel Foundation for his project titled ?Pyrethroids and Neurodegeneration: The Absorption of Pyrethroids into S. domesticus (pig) Lungs and the Effect of the Recovered Pyrethroid Levels on PC12 Neurite Retraction.? He was advised by Dr. Paul Housley of the USC School of Medicine. Shivani won $1000 presented by Agilent Technologies for her project titled ?The Effect of Green Tea EGCG on the Ability of p25-Activated Cyclin-Dependent Kinase 5 (cdk5) to Induce Cell Death in cos-7 Kidney Cells: Implications for Alzheimer's Disease.? Her mentor was Dr. Deanna Smith of the USC Biology Department.

Spring Valley High School and the USC Region II Science and Engineering Fair will also receive $1000 each in recognition of the work of these students. Dr. Don Jordan, Director of the USC Region II Fair says, ?This is no small win for South Carolina?s USC Region II Science and Engineering Fair or these terrific students, as we must compete against the magnet schools in Virginia, New York, Ohio, and California as well as very many gifted international students?.

DISCOVERY CHANNEL YOUNG SCIENCE CHALLENGE / HISTORICAL CHANGES

We have worked hard in the past several years to strengthen the USC Central South Carolina Science & Engineering Fair. We made it possible for sixth graders to become eligible for the Region II Science & Engineering Fair in 1996. We re-introduced Team Projects in 1997. In 1999, we lowered the grade limit to enable fifth-grade students in the nine-county region to become eligible.

We nominated 60 middle school students and five alternates to compete in DCYSC in 2007. DCYSC nominees receive national recognition from Science Service that includes an honor certificate, a DCYSC T-shirt, a lapel pin recognizing their achievement and an entry form to compete with 6,000 other students at the international level.

Three (3) from Region II were chosen by the Discovery Channel Young Scientist Challenge (DCYSC) as semifinalists (400 nation-wide). ?These students have the knowledge, enthusiasm and imagination to become the scientific trailblazers of tomorrow,? said Judith A. McHale, President and CEO, Discovery Communications. The breadth and knowledge demonstrated by the 400 semifinalists is inspiring and sets an example for anyone with wants to explore the world around them. Chosen as three of the top 400 semifinalists from over 7,000 students who won a DCYSC nomination at their local, regional or state fair, the Region II semifinalists are: Arjun Aggarwal - Pleasant Hill Middle School, 7th grade, Teacher: Elizabeth Frazer, Title: Can the Concept of Equilibrioception Be Applied in Robotics?; Emily Bakaj - Dent Middle School, 8th grade, Teacher: Susan Yelton, Title: The Effects of Nutrient vs. Antibacterial Substances on Escherichia coli Biofilms and Ian Wright - Cardinal Newman Middle School, 8th grade, Teacher: Mary S. Burts, Title: Local Concern: A Case of Bad Water.

The other six semifinalists from the State of South Carolina are:

Ion Garcia - Greenville Middle Academy, 6th grade Title: Inactive Ingredients in Pedialyte: Are They Really Inactive?; Thomas McAllister - McCants Middle School, 7th grade, Title: The Transpiration of Leaves. Thomas Melanson - Hilton Head Middle School, 6th grade, Title: Polymer Power: What Type of Compressible Material Most Efficiently Releases Energy? Randal Parke

What are the outcomes or results of this program? (Program outcomes can be both quantitative and qualitative and should address the program's objectives. Please use the most recent data available. Examples of outcomes would be: results of surveys, test data, increase in minority participation, reduction in achievement gaps, teacher loans awarded, textbooks purchased, etc.)(MAX: 5000 characters)

The methods used to measure results are quantitative as well as qualitative. Increasing numbers of participants in various events such as the MESAS Contest (255 entries in 2004, 806 in 2007) based upon prior years? events are used. Also, comparisons with other regions and states give us a good overview regarding the successes of our programs. For example, there were 9 DCYSC semifinalists from South Carolina in 2007; making this state one of the pre-eminent states for DCYSC in the Southeast region of the United States. (See numbers above in question #2). Comparisons regarding the number of students from South Carolina who receive national attention to those from other states and countries through programs sponsored by the SCAS, SCJAS or any of the states 8 regional science fairs further validate our assessments of the program.

- Five (5) national winners (top in their category) at International Science and Engineering Fair in the last six years
(Prior years zero).

Thirty (39) DCYSC semifinalists in the last five years (prior years zero).

Eight Hundred & Six (806) students state-wide competing in the SCAS MESAS Mail-in contest. (Prior year 711)

- We compare the number of students attending the South Carolina Academy of Science Annual Meeting and presenting research papers with attendance numbers from prior years.
- We compare the number of students attending MESAS Workshops in the four MESAS regions with attendance numbers from prior years.
- We compare the number of students receiving funds from our Young Research Grants-in-Aid Program with the number of students participating in prior years.
- We compare the number of teachers receiving certification as a Certified Metric Specialist with the number of teachers certified from prior years and from other states. 20 certified in 2006-07.
- We compare the number of schools in each science fair region starting a school-wide science fair program with the current number of schools already involved in school-wide science fair programs. The objective of collecting this data is to have every child in South Carolina involved with the scientific process by creating and participating in a local school-wide science fair competition. (Inquiry based learning.)
- To compare the number of students presenting research papers in grades 4 ? 12 with states with similar programs.
- To compare the number of students who receive national recognition in South Carolina with students from other states.

Qualitative methods are harder to discern, but no less important. Reaching school districts less affluent within the state and giving those students the same opportunities as students from every corner of the state has been a huge achievement. The increasing response from parents and teachers concerning upcoming events and their willingness to be a part of those events as a guest, a mentor, a judge or a presenter have occurred more frequently compared to past years.

Program Evaluations

What was the date of the last external or internal evaluation of this program?

Has an evaluation been conducted?

○ Yes ◉ No

If an evaluation was conducted, what were the results and primary recommendations of the evaluation? (MAX: 2000 characters)

Can you provide a URL link, electronic version or hard copy of this evaluation to the Education Oversight Committee?

○ Yes

◉ No

If no, why not?(MAX: 100 characters)

No formal evaluation, we report the increase in student and teacher participation and successes.

The following questions do NOT apply to programs having a program code beginning with 01. (These are programs administered by or through the Department of Education. The Office of Finance at the Department of Education will provide answers to these questions.) If your program code begins with 01, please hit the NEXT button below. Once you advance to the next page, hit the SUBMIT button.

Please mark the appropriate response:

The total amount of EIA funds requested for this program for the next fiscal year will be:

- ○ The same as appropriated in the current fiscal year's appropriation
- ◉ An increase over the current fiscal year's appropriation
- ○ A decrease over the current fiscal year's appropriation

If you indicated an increase or decrease in funding for the next fiscal year, what is the total amount requested for this program for the next fiscal year?

160,000

If you indicated an increase or decrease, please describe the reasons for the increase or decrease. How will the increase or decrease impact the objectives of the program as answered in question 7?(MAX: 3500 characters)

Program participation has increased. Example: 850 attended just the Midlands MESAS Workshop at Benedict College Nov 11, 2006 and increase of 350 students. An Increase in the number of Science Fair Students from 200 in 2000 to 700 in 2007 in Region II alone. Participation cost has increase in the past five years. We have been able to maintain Anthony Kurlychek for the past three years at an almost constant salary. Anthony has now earned his BA degree and will require additional funds. To lose his experience would be a hard blow to the future of our programs. We originally were supposed to increment our fund each year to reach a goal of $300,000. We are in need of hiring a teacher with experience to handle some of the things our director Don Jordan had been doing for decades. We need the extra help to complete the goal of establishing more Middle/Elementary School Academy of Science (MEASAS) in other areas of the State. MESAS has become one of the more popular programs in South Carolina for students in grades 4-8, calling for parental participation at workshops for students had been an excellent feature of this program. We now have to pay the MESAS directors in order to make it work, since the job is very time consuming on an individual.
There are some needs that we will not be able to fulfill at this time. We have found that one full-time administrative assistant is not sufficient to handle the new demands on SCAS. Don Jordan is a volunteer and has directed the office as well as developed the funds for 7 years. We need to provide additional assistance for the director.

The US DOE has ended all trip awards to its labs in the U.S. We need to provide additional trip awards to students for their research. This will mean additional funds. The Academy membership dues alone cannot accomplish this. We want to provide additional support to the eight science fair directors in South Carolina. We want all the science fairs in SC to become involved with the national program Discovery Channel Young Scientist Challenge (DCYSC) for grades 5-8. The reorganization of the Hubs reshaped the district and decreased personnel, which makes it harder for a Hub to provide the leadership needed to manage a MESAS Region. As a result we will need to provide additional funds to the MESAS Directors in Regions I, IV, & V, update and modernize each region.

By the year 2006 we had hoped to have full funding in excess of $300,000 (This did not happen due to state budget)
For the School year 2006-2007 we would disperse $58,000 through SPAR and the remaining $42,000 would be dispersed through the Treasurer of SCAS.

In order to do this I will seek approval from the SC Department of Education and guidance from the legislature. As you know, the SC Academy of Science is working in a critical needs area for the State of South Carolina with the objective to increase the number of K-12 students participating in science, mathematics and engineering. The office should initiate new grants

to supplement the legislative funds. In addition, the office of SCAS is not considered to be a 9 to 5 job. The months of August, September, October, February, March and April require weekend and late night work.

Funding:
Our organization is funded by donations to the Trust Fund, by a grant from the state legislature, and by membership dues. Any fees charged for workshops or events are used to defray the costs associated with such events and are not fund-raising.

Please fill in the attached charts to reflect the budget for this program in the prior fiscal year and the budget for this program in the current fiscal year.

Funding Source	Prior FY Actual	Current FY Estimated
EIA	100,000	100,000
General Fund		
Lottery		
Fees		
Other Sources		
Grant		
Contributions, Foundation	006,000	006,000
Other (Specify)		
Carry Forward from Prior Yr		
TOTAL	106,000	106,000

Expenditures	Prior FY Actual	Current FY Estimated
Personal Service	48,000	51,350
Contractual Services	2,000	2,000
Supplies and Materials	10,000	10,000
Fixed Charges		
Travel	2,000	2,000
Equipment	2,000	2,000
Employer Contributions		
Allocations to Districts/Schools/Agencies/Entities		
Other: Please explain	42,000	38,650
Balance Remaining	0	
TOTAL	106,000	106,000
#FTES		

☑ Data entry complete for this year.

Will additional information (eg. charts, tables, graphs, etc.) be submitted under separate cover to EOC for this program? If so, submit to Melanie Barton at mbarton@eoc.sc.gov. The program number should be cited in the subject of the e-mail.

◉ Yes ○ No